

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
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Application Serial Number: 10/561,720
Source: 1FWP
Date Processed by STIC: 2/21/07

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RAW SEQUENCE LISTING

DATE: 02/21/2007

PATENT APPLICATION: US/10/561,720

TIME: 13:58:54

Input Set : A:\6550_000072 Sequence Listing ST25.txt

Output Set: N:\CRF4\02212007\J561720.raw

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3 <110> APPLICANT: Board of Trustees Operating Michigan State University
4 Allison, Richard F.
6 <120> TITLE OF INVENTION: Expression of a Recombinant Transgene
8 <130> FILE REFERENCE: 6550-000072/US/NPB
10 <140> CURRENT APPLICATION NUMBER: US 10/561,720
11 <141> CURRENT FILING DATE: 2005-12-22
13 <150> PRIOR APPLICATION NUMBER: PCT/US04/21451
14 <151> PRIOR FILING DATE: 2004-07-02
16 <150> PRIOR APPLICATION NUMBER: US 60/485,073
17 <151> PRIOR FILING DATE: 2003-07-03
19 <160> NUMBER OF SEQ ID NOS: 15
21 <170> SOFTWARE: PatentIn version 3.3
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 26
25 <212> TYPE: DNA
26 <213> ORGANISM: Cowpea chlorotic mottle virus
28 <400> SEQUENCE: 1
29 aagtggatccc cctcttgtgc ggctgc 26
32 <210> SEQ ID NO: 2
33 <211> LENGTH: 16
34 <212> TYPE: DNA
35 <213> ORGANISM: Cowpea chlorotic mottle virus
37 <400> SEQUENCE: 2
38 actccaaaga gttctt 16
41 <210> SEQ ID NO: 3
42 <211> LENGTH: 835
43 <212> TYPE: DNA
44 <213> ORGANISM: Cauliflower mosaic virus
46 <400> SEQUENCE: 3
47 agattagcct tttcaatttc agaaagaatg ctaaccacac gatgggttaga gaggcttacg 60
49 cagcaggtct catcaagacg atctacccga gcaataatct ccaggaaatc aaataccttc 120
51 ccaagaaggt taaagatgca gtcaaaaagat tcaggactaa ctgcatcaag aacacagaga 180
53 aagatatatt tctcaagatc agaagtacta ttccagtatg gacgattcaa ggcttgcttc 240
55 acaaaccaag gcaagtaata gagattggag tctctaaaaa ggtagttccc actgaatcaa 300
57 aggccatgga gtcaaaagatt caaatagagg acctaacaga actcgccgta aagactggcg 360
59 aacagttcat acagagtctc ttacgactca atgacaagaa gaaaatcttc gtcaacatgg 420
61 tggagcacga cacacttgct tactccaaaa atatcaaaga tacagtctca gaagaccaa 480
63 gggcaattga gacttttcaa caaagggtaa tatccggaaa cctcctcgga ttccattgcc 540
65 cagctatctg tcaactttatt gtgaagatag tggaaaaagg aggtggctcc tacaatgcc 600
67 atcattgcga taaaggaaa gcatcggtt aagatgcctc tgccgacagt ggtcccaaag 660
69 atggaccccc acccacgagg agcatcggtg aaaaagaaga cgttccaacc acgtcttcaa 720
71 agcaagtgga ttgatgtgat atctccactg acgtaaggga tgacgcacaa tcccactatc 780
73 ctctcgcaaga cccttcctct atataaggaa gttcatttca tttggagaga acacg 835

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76 <210> SEQ ID NO: 4
77 <211> LENGTH: 581
78 <212> TYPE: DNA
79 <213> ORGANISM: Encephalomyocarditis virus
81 <400> SEQUENCE: 4
82 aattccgccc ctctccctcc ccccccccta acgttactgg ccgaagccgc ttggaataag      60
84 gccggtgtgc gtttqtctat atgtgatttt ccaccatatt gccgtctttt ggcaatgtga      120
86 gggcccggaa acctggccct gtcttcttga cgagcattcc taggggtctt tcccctctcg      180
88 ccaaaggaat gcaaggctctg ttgaatgtcg tgaaggaagc agttcctctg gaagcttctt      240
90 gaagacaaac aacgtctgta gcgacccttt gcaggcagcg gaacccccca cctggcgaca      300
92 ggtgcctctg cggccaaaag ccacgtgtat aagatacacc tgcaaaaggcg gcacaacccc      360
94 agtgccacgt tgtgagttgg atagtgttgg aaagagtcaa atggctctcc tcaagcgtat      420
96 tcaacaaggg gctgaaggat gcccagaagg taccatttg tatgggatct gatctggggc      480
98 ctggtgtcac atgctttaca tgtgtttagt cgaggttaaa aaaacgtcta ggccccccga      540
100 accacgggga cgtggttttc ctttgaaaaa cacgatgata a                        581
103 <210> SEQ ID NO: 5
104 <211> LENGTH: 581
105 <212> TYPE: RNA
106 <213> ORGANISM: Encephalomyocarditis virus
108 <400> SEQUENCE: 5
109 aaauccgccc cucucccucc cccccccua acguuacugg ccgaagccgc uuggaauaag      60
111 gccggugugc guuugucuaa augugauuuu ccaccauaau gccgucuuuu ggcaauguga      120
113 gggcccggaa accuggcccu gucuucuga cgagcauucc uaggggucuu ucccucucg      180
115 ccaaaggaau gcaaggucug uugaauugcg ugaaggaagc aguuccucug gaagcuucuu      240
117 gaagacaaac aacgucugua gcgaccuuu gcaggcagcg gaacccccca ccuggcgaca      300
119 ggugccucug cggccaaaag ccacguguaa aagauacacc ugcaaaaggcg gcacaacccc      360
121 agugccacgu ugugaguugg auaguugugg aaagagucaa auggcucucc ucaagcguaa      420
123 ucaacaaggg gcugaaggau gcccagaagg uaccccauug uaugggaucg gaucuggggc      480
125 cucggugcac augcuuuaa uguguuuagu cgagguuaaa aaaacgucua ggccccccga      540
127 accacgggga cgugguuuuc cuuugaaaaa cacgaugaua a                        581
130 <210> SEQ ID NO: 6
131 <211> LENGTH: 581
132 <212> TYPE: DNA
133 <213> ORGANISM: Encephalomyocarditis virus
135 <400> SEQUENCE: 6
136 ttatcatcgt gtttttcaaa ggaaaaccac gtccccgtgg ttcggggggc ctagacgttt      60
138 ttttaacctc gactaaacac atgtaaagca tgtgcaccga ggccccagat cagatcccat      120
140 acaatggggg accttctggg catccttcag ccccttgttg aatacgcttg aggagagcca      180
142 tttgactctt tccacaacta tccaactcac aacgtggcac tggggttgtg ccgcctttgc      240
144 aggtgtatct tatacacgtg gcttttggcc gcagaggcac ctgtcgccag gtgggggggt      300
146 ccgtgcctg caaagggtcg ctacagacgt tgtttgtctt caagaagctt ccagaggaac      360
148 tgcttccttc acgacattca acagacctt cattcctttg gcgagagggg aaagaccctt      420
150 aggaatgtc gtcaagaaga cagggccagg ttcccgggc ctcacattgc caaaagacgg      480
152 caatatggtg gaaaatcaca tatagacaaa cgcacaccgg ccttattcca agcggcttcg      540
154 gccagtaacg ttaggggggg gggagggaga ggggcggaat t                        581
157 <210> SEQ ID NO: 7
158 <211> LENGTH: 581
159 <212> TYPE: RNA
160 <213> ORGANISM: Encephalomyocarditis virus

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162 <400> SEQUENCE: 7
163 uuaucaucgu guuuuucaaa ggaaaaccac gucccccuggg uucgggggggc cuagacguuu 60
165 uuuuaaccuc gacuaaacac auguaaagca ugugcaccga ggccccagau cagaucaccau 120
167 acaauggggg accuucuggg cauccuucag ccccuuguug aaucgcguug aggagagcca 180
169 uuugacucuu uccacaacua uccaacucac aacguggcac uggggguugug ccgccuuugc 240
171 agguaguauc uauacacgug gcuuuuggcc gcagaggcac cugucgccag guggggggguu 300
173 ccgcugccug caaagggugc cuacagacgu uguuugucuu caagaagcuu ccagaggaac 360
175 ugcuuccuuc acgacauuca acagaccuug cauuccuuug gcgagagggg aaagaccccu 420
177 aggaugcuc gucaagaaga cagggccagg uuuccgggcc cucacauugc caaaagacgg 480
179 caauauggug gaaaauca uauagacaaa cgcacaccgg ccuaauucca agcggcuucg 540
181 gccaguaacg uaaggggggg gggagggaga ggggcggaau u 581
184 <210> SEQ ID NO: 8
185 <211> LENGTH: 242
186 <212> TYPE: DNA
187 <213> ORGANISM: Cowpea chlorotic mottle virus
189 <400> SEQUENCE: 8
190 agtgcccgtc gaagagcgtt acactagtgt ggcctacttg aaggctagtt ataaccgttt 60
192 ctttaaaccg taatcgttgt tgaaacgtct tccttttaca agaggattga gctgcccttg 120
194 ggttttactc cttgaacctt tcggaagaac tctttggagt tcgtaccagt acctcacata 180
196 gtgaggtaat aagactgggt ggcagcgcct agtcgaaaga ctaggtgatc tctaaggaga 240
198 cc 242
201 <210> SEQ ID NO: 9
202 <211> LENGTH: 242
203 <212> TYPE: RNA
204 <213> ORGANISM: Cowpea chlorotic mottle virus
206 <400> SEQUENCE: 9
207 agugcccgcg gaagagcguu acacuagugu ggccuacuug aaggcuagu uuaaccguuu 60
209 cuuuuaaccg uaauugguu ugaauugcu uccuuuuaca agaggauuga gcugcccuug 120
211 gguuuuacuc cuugaaccuu acggaagaac ucuuuggagu ucguaccagu accucacaua 180
213 gugagguaau aagacuggug ggcagcgcgu agucgaaaga cuaggugaug ucuaaggaga 240
215 cc 242
218 <210> SEQ ID NO: 10
219 <211> LENGTH: 242
220 <212> TYPE: DNA
221 <213> ORGANISM: Cowpea chlorotic mottle virus
223 <400> SEQUENCE: 10
224 ggtctcctta gagatcacct agtctttcga ctaggcgtg cccaccagtc ttattacctc 60
226 actatgtgag gtactggtac gaactccaaa gattcttcc gaagggttca aggagtaaaa 120
228 cccaagggca gctcaatcct cttgtaaaag gaagacgttt caacaacgat taccgtttaa 180
230 agaaacgggt ataactagcc ttcaagtagg ccacactagt gtaacgctct tcagcgggca 240
232 ct 242
235 <210> SEQ ID NO: 11
236 <211> LENGTH: 242
237 <212> TYPE: RNA
238 <213> ORGANISM: Cowpea chlorotic mottle virus
240 <400> SEQUENCE: 11
241 ggucuccuua gagaucaccu agucuuucga cuaggcgcug cccaccaguc uuauuaccuc 60
243 acuaugugag guacugguac gaacuccaaa gaguucucc gaagggguca aggaguaaaa 120
245 cccaagggca gcucaauccu cuuguuaaaag gaagacguuu caacaacgau uaccguuuua 180

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```

247 agaaacgguu auaacuagcc uucaaguagg ccacacuagu guaacgcucu ucagcgggca      240
249 cu                                                                    242
252 <210> SEQ ID NO: 12
253 <211> LENGTH: 12
254 <212> TYPE: DNA
255 <213> ORGANISM: Artificial
257 <220> FEATURE:
258 <223> OTHER INFORMATION: Artificial sequence used to show antisense relationship of a
gene
259      and IRES to a promoter and viral 3' UTR
262 <220> FEATURE:
263 <221> NAME/KEY: misc_feature
264 <222> LOCATION: (1)..(3)
265 <223> OTHER INFORMATION: n is a, c, g, or t
267 <400> SEQUENCE: 12
W--> 268 nnncatggaa tt                                                    12
271 <210> SEQ ID NO: 13
272 <211> LENGTH: 12
273 <212> TYPE: DNA
274 <213> ORGANISM: Artificial
276 <220> FEATURE:
277 <223> OTHER INFORMATION: Complement of artificial sequence used to show antisense
278      relationship of a gene and IRES to a promoter and viral 3' UTR
281 <220> FEATURE:
282 <221> NAME/KEY: misc_feature
283 <222> LOCATION: (10)..(12)
284 <223> OTHER INFORMATION: n is a, c, g, or t
286 <400> SEQUENCE: 13
W--> 287 aattccatgn nn                                                    12
290 <210> SEQ ID NO: 14
291 <211> LENGTH: 12
292 <212> TYPE: RNA
293 <213> ORGANISM: Artificial
295 <220> FEATURE:
296 <223> OTHER INFORMATION: Transcript of RNA polymerase
299 <220> FEATURE:
300 <221> NAME/KEY: misc_feature
301 <222> LOCATION: (1)..(3)
302 <223> OTHER INFORMATION: n is a, c, g, or u
304 <400> SEQUENCE: 14
W--> 305 nnncauggaa uu                                                    12
308 <210> SEQ ID NO: 15
309 <211> LENGTH: 12
310 <212> TYPE: RNA
311 <213> ORGANISM: Artificial
313 <220> FEATURE:
314 <223> OTHER INFORMATION: Complement of transcript of RNA polymerase
317 <220> FEATURE:
318 <221> NAME/KEY: misc_feature
319 <222> LOCATION: (10)..(12)

```

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320 <223> OTHER INFORMATION: n is a, c, g, or u

322 <400> SEQUENCE: 15

W--> 323 aauccaagn nn

12

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 02/21/2007
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:12; N Pos. 1,2,3
Seq#:13; N Pos. 10,11,12
Seq#:14; N Pos. 1,2,3
Seq#:15; N Pos. 10,11,12

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:12,13,14,15

VERIFICATION SUMMARY

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L:268 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:287 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:305 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
L:323 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0